Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GUO-FU ZHOU and ROEL VAN WOUDENBERG

Appeal No. 2003-0709
Application No. 09/332,240

ON BRIEF

Before KIMLIN, LIEBERMAN and PAWLIKOWSKI, Administrative Patent Judges.

KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-8, all the claims remaining in the present application. Claim 1 is illustrative:

1. An optical information medium for rewritable recording at constant angular velocity by means of a laser-light beam, said medium comprising a disc-shaped substrate carrying a stack of layers, which stack comprises in this order:

- a first dielectric layer,

- a recording layer of a phase-change material which is able to record amorphous marks when in the crystalline state, the recording layer forming an annular recording area with an inner and an outer radius,

- a second dielectric layer,

- a metal mirror layer,

characterized in that the recording layer has a gradually increasing thickness from the inner to the outer radius.

The examiner relies upon the following reference as evidence of obviousness:

Sato (JP '827) JP 3-216827 Sep. 24, 1991
(Japanese patent)

Appellants' claimed invention is directed to an optical information medium for rewritable recording by means of a laser-light beam. The medium comprises, inter alia, a recording layer of a phase-change material that forms an annular recording area having an inner and an outer radius. Also, the recording layer increases in thickness from the inner to the outer radius. According to appellants, "by shaping the recording layer in this manner the increase in the relative linear velocity of the recording layer is readily compensated for by increasing the crystallization rate of the recording layer" (page 5 of Brief, first paragraph). Also, the present specification demonstrates that "with increasing radial distance r from the center of the disc, the CET [complete erasure time] of the recording layer

decreases (i.e., a higher crystallization rate), which meets the increase of the linear velocity of the recording layer in said radial direction" (page 10 of specification, first paragraph).

Appealed claims 1-8 stand rejected under 35 U.S.C. § 103 as being unpatentable over JP '827.

We have thoroughly reviewed the respective positions advanced by appellants and the examiner. In so doing, we find that the examiner has failed to establish a prima facie case of obviousness for the claimed subject matter. Accordingly, we will not sustain the examiner's rejection.

Although JP '827 discloses an optical information medium for rewritable recording comprising the presently claimed first and second dielectric layers, recording layer and metal mirror layer, the examiner appreciates that the reference does not disclose that the recording layer has a gradually increasing thickness from the inner to the outer radius, as presently claimed. Indeed, the reference teaches quite the opposite, i.e., a recording layer wherein its thickness gradually decreases from the inner to the outer radius. Notwithstanding this lack of a teaching of the claimed thickness for the recording layer, the examiner legally concludes that "it would have been an obvious matter of design choice to change the direction of size change

from one direction to another direction, since such modification would have involved a mere change in the size of a component (from one direction to another direction)" (page 4 of Answer, fourth paragraph). However, the examiner has not refuted appellants' argument that "[t]his is not a change in size, as the Examiner contends, but is a change in shape since the recording layers of the patent and of the optical recording medium defined by Claim 1 may have the same weight and surface area but have different relative thickness" (page 7 of Brief, last paragraph). Moreover, appellants' specification provides evidence that changing the relative thickness of the recording layer is not simply a matter of design choice by stating that JP '827 "relates to a different problem: the thickness reduction in the radial direction allows for recording at a constant power when the medium rotates at a constant angular velocity" (page 8 of specification, lines 11-13). The examiner has pointed to no suggestion in JP '827 that the recording layer may have a gradually increasing thickness from the inner to the outer radius, nor has the examiner established that one of ordinary skill in the art would have reasonably expected that modifying the recording layer of JP '827 in the manner claimed would have resulted in the effect demonstrated in the present specification.

Lacking such a suggestion in the prior art or such scientific reasoning by the examiner, we must conclude that the examiner's conclusion of obviousness is without the requisite factual support.

In conclusion, based on the foregoing, we are constrained to reverse the examiner's rejection.

REVERSED

EDWARD C. KIMLIN Administrative Patent Judge	)	
PAUL LIEBERMAN Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
BEVERLY PAWLIKOWSI Administrative Patent Judge	)	

ECK:clm

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